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(54) Title: CONJUGATED INFRARED FLUORESCENT SUBSTANCES FOR DETECTION OF CELL DEATH

(57) Abstract: One aspect of the invention is an infrared fluorescent reagent that may be useful to provide images of regions of cell death. The reagent may comprise a fluorescent substance, preferably an infrared fluorescent substance, conjugated to a targeting moiety that selectively localizes or binds to cells or tissue undergoing cell death, such as annexin V. The reagent may also comprise an infrared fluorescent substance associated with an antibody, antibody fragment, or ligand that accumulates within a region of diagnostic significance, such as a region characterized by necrosis or apoptosis. In one embodiment, the reagent comprises annexin V covalently conjugated to IRDye78. In another embodiment, the reagent comprises annexin V covalently conjugated to a quantum dot. More broadly, the reagents described herein may be used in detecting cell death.